



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Biopesticides and Pollution Prevention Division (7511P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

EPA Reg. Number:

73562-3

Date of Issuance:

4/17/2017

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

LPE 1% SL

Name and Address of Registrant (include ZIP Code):

DOOSAN Corporation, Glonet BU  
 Biotech Research Institute  
 864 B/5F, Aict, 864-1, lui-dong,  
 Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.
2. Submit Storage Stability and Corrosion Characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.
3. Make the following labeling change before you release this product for shipment:  
 Revise the EPA Registration Number to read, "EPA Reg. No. 73562-3."
4. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Signature of Approving Official:

Andrew C. Bryceland, Team Leader  
 Biochemical Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

Date:

4/17/2017

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 4/13/17

If you have any questions, please contact Chris Pfeifer of my team by phone at 703-308-0031 or via email at [pfeifer.chris@epa.gov](mailto:pfeifer.chris@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "For Andrew C. Bryceland".

Andrew C. Bryceland, Team Leader  
Biochemical Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

Enclosure

# LPE 1% SL

Alternate Brand Name: "SignaFresh Plus"

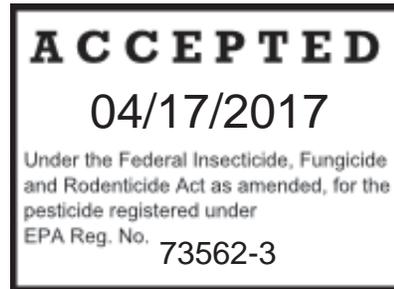
**Active Ingredient:**

Lysophosphatidylethanolamine (LPE) ..... 1.00%

**Other Ingredients:**..... 99.00%

**Total** ..... 100.00%

Contains 0.0751 pounds LPE per gallon



**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See (side) (back) panel for first aid and additional precautionary statements.

EPA Reg. No.: 73562-3  
EPA Est. No.: XXXXX-XX-X

Manufactured by: DOOSAN Corporation, Glonet BU  
Biotech Research Institute  
864 B/5F, Aict, 864-1, lui-dong,  
Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

Net Contents: XX  
Batch/Lot Number: XX

<b>FIRST AID</b>	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>● Take off contaminated clothing.</li> <li>● Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>● Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>● Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>● Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>● Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergencies, call the poison control center at 1-800-222-1222.	

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

Caution. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Applicators and other handlers must wear:

- Coveralls
- Waterproof gloves
- Shoes plus socks.

Follow manufacturer's instructions for cleaning / maintaining PPE. Keep and wash PPE separately from other laundry.

**User Safety Recommendations:** Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards:** Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry intervals (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval of 4 hours.

PPE requirement for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, is coveralls, waterproof gloves and shoes plus socks.

#### **Non-Agricultural Use Requirements**

The requirements in this box apply to uses of this product that are **not** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried or dusts have settled. For post-harvest treated commodities, unprotected persons should not handle until dip has dried.

#### **General:**

LPE 1% SL is a growth regulator that enhances fruit quality, ripening and shelf life of select fruits, flowers and vegetables. LPE 1% SL application does not enhance respiration, like other ripening agents. LPE 1% SL is also known to reduce senescence by inhibiting some of enzymes involved in membrane breakdown. For these reasons, LPE 1% SL enhances and promotes shelf life. When applied to physiologically mature fruit (at breaker stage, i.e. early stage of ripening), it stimulates and promotes ripening.

READ ENTIRE LABEL BEFORE USING THIS PRODUCT.

#### **DIRECTIONS FOR USE: SPECIFIED TREATMENTS**

##### **Mixing Instructions:**

Shake well (1-3 minutes) before mixing. See Pre Harvest Application table below for the application rate (amount of LPE 1% SL fl. oz./acre) specific to your crop. Dilute product with the amount of water necessary to treat the intended area. Add half the water to tank, then add LPE 1% SL. Add remaining water and mix thoroughly.

##### **Pre-Harvest Application Directions:**

Apply LPE 1% SL in water to wet fruit uniformly, using conventional ground or aerial application equipment. For better coverage, use a sticker deposition agent. Do not use with organo-silicone surfactants and use antifoam agents sparingly.

Apply LPE 1% SL approximately two weeks prior to harvest, unless noted otherwise under "Special Instructions" on the following table.

Follow directions for specific crop listed below:

<b>PRE HARVEST APPLICATION</b>					
<b>Crop</b>			<b>Rate in oz/acre</b>	<b>Use</b>	<b>Special Instructions</b>
<b><i>Fruiting Vegetables</i></b>					
<b>Eggplants</b>			8 - 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	
<b>Tomatoes</b>	Vine Ripe	Field	8 - 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Uniform color development</li> <li>• Improved fruit firmness</li> </ul>	<ul style="list-style-type: none"> <li>• Apply 10 to 14 days prior to desired use response.</li> <li>• Reapply at 14-day intervals until final harvest.</li> </ul>
<b>Tomatoes</b>	Vine Ripe	Greenhouse	2 - 4		<ul style="list-style-type: none"> <li>• Apply 7 to 10 days prior to desired use response.</li> <li>• Reapply at 7 to 14 day intervals until final harvest.</li> </ul>
<b>Tomatoes</b>		Processing	15 - 45		<ul style="list-style-type: none"> <li>• Apply approximately two weeks prior to harvest.</li> </ul>
<b>Peppers</b>	Red Peppers Hot Peppers		27	<ul style="list-style-type: none"> <li>• Accelerated fruit ripening</li> <li>• Increased early marketable yield</li> <li>• Uniform color development*</li> <li>• Improved fruit quality</li> </ul>	<ul style="list-style-type: none"> <li>• Apply at 10 to 20% color break.</li> </ul>
	Green Peppers		27		<ul style="list-style-type: none"> <li>• Apply two to three weeks before harvest.</li> </ul>
<b>Pimentos</b>			8 - 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	

<b>Cucurbits</b>			
<b>Melons Squash Pumpkins</b>	15 - 45	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Improved fruit quality</li> </ul>	
<b>Berries/Small Fruits</b>			
<b>Raspberries Boysenberries Blackberries Blueberries</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	
<b>Cranberries</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	<ul style="list-style-type: none"> <li>• Can be applied through irrigation systems. Consult your Doosan Corp. representative for use guidance.</li> </ul>
For tank-mixing with chlorothalonil fungicides	8 – 30	<ul style="list-style-type: none"> <li>• Decrease the phytotoxic effect of chlorothalonil containing fungicides</li> </ul>	<ul style="list-style-type: none"> <li>• Apply in tank mixture with the chlorothalonil fungicide. Consult the fungicide label for appropriate rate and timing of application.</li> </ul>
<b>Currants</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	
<b>Strawberries</b>	6- 25	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	<ul style="list-style-type: none"> <li>• Apply 7 to 10 days prior to desired use response.</li> <li>• Reapply at 7 to 14 day intervals until final harvest.</li> </ul>

<b>Tree Fruits</b>			
<b>Avocados</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	
<b>Citrus</b> Grapefruits, Mineolas, Lemons, Limes, Mandarins, Oranges, Pummelos, Tangelos and Tangerines	27	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> <li>• Improved fruit and rind quality</li> </ul>	<ul style="list-style-type: none"> <li>• Apply two to three weeks before to harvest.</li> <li>• Apply four to six weeks before harvest</li> </ul>
<b>Pome Fruits</b> Apples	27	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development*</li> <li>• Improved fruit quality</li> </ul>	<ul style="list-style-type: none"> <li>• Apply five to six weeks before harvest.</li> </ul>
Crabapples and Pears	27		<ul style="list-style-type: none"> <li>• Apply two weeks before harvest.</li> </ul>

<b>Stone Fruits</b> Apricots and Plums	27	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development*</li> <li>• Improved fruit quality</li> </ul>	<ul style="list-style-type: none"> <li>• Apply three weeks before to harvest.</li> </ul>
Peaches and Nectarines	14		<ul style="list-style-type: none"> <li>• Apply at pit hardening, approximately three weeks before harvest</li> </ul>
Red Cherries	27		<ul style="list-style-type: none"> <li>• Apply three weeks before harvest</li> </ul>
Bi-color Cherries	27		<ul style="list-style-type: none"> <li>• Apply seven to 10 days before harvest</li> </ul>
<b>Tree Nuts</b> Pistachios, Walnuts, Pecans	8 – 30	<ul style="list-style-type: none"> <li>• Accelerated fruit ripening</li> <li>• Improved fruit quality</li> </ul>	
<b>Vine Fruits</b>			
<b>Grapes</b> Raisin, Wine and Juice, and Table Grapes (such as Flame Seedless, Crimson, Thompson Seedless and Red Globe)	30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development*</li> <li>• Improved fruit quality</li> </ul>	
<b>Kiwi Fruit</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Improved fruit quality</li> </ul>	

<b>Other Crops</b>			
<b>Coffee</b> <b>Mangos</b> <b>Pomegranates</b> <b>Pineapples</b>	8 – 30	<ul style="list-style-type: none"> <li>• Increased early marketable yield</li> <li>• Accelerated fruit ripening</li> <li>• Uniform color development</li> <li>• Improved fruit quality</li> </ul>	
<b>Mushrooms</b>	8 – 30	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>	
<b>Cotton</b>	15 - 45	<ul style="list-style-type: none"> <li>• Acceleration of boll opening.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply when there are sufficient unopened mature bolls to produce desired yields.</li> </ul>

\* Not intended for uniform color development use on green peppers, pears, apricots or raisin grapes.

#### **Post-Harvest Application Directions:**

Apply LPE 1% SL as a washwater dip or as a spray. Prior to sorting and packaging, dip fruit in well-agitated water containing LPE 1% SL for up to 3 minutes or uniformly spray fruit with LPE 1% SL to achieve full coverage.

See Post-Harvest Application Table for the application rate (parts per million) specific to the commodity to be treated and the Dilution Table to determine the amount of LPE 1% SL needed to make solution. For dip applications add LPE 1% SL to washwater, maintain water agitation and submerge fruit in washwater for up to 3 minutes. For use as a spray, dilute LPE 1% SL in water and apply uniformly to cover fruit prior to packing. Maintain chlorine levels and water pH at levels recommended for post-harvest treatments. Allow fruit to dry before packaging. Follow standard handling procedures after treatment.

#### **Dilution Table**

<b>Parts Per Million (PPM)</b>	<b>Amount of LPE 1% SL to make 100 gallons of spray solution</b>
25	3.5 fl. oz.
50	7 fl. oz.
100	14 fl. oz.
200	28 fl. oz.

Follow directions below for crop specific post harvest applications directions for use.

<b>POST HARVEST APPLICATION</b>		
<b>Crop/Commodity</b>	<b>Rate (ppm) for dip and/or spray</b>	<b>Use</b>
<b><i>Fruiting Vegetables</i></b>		
<b>Eggplants</b>	25-100 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>
<b>Tomatoes</b> Fresh Market	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Accelerated natural ripening</li> </ul>
<b>Peppers</b>	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>
<b><i>Berries/Small Fruits</i></b>		
<b>Blueberries</b> <b>Boysenberries</b> <b>Cranberries</b> <b>Currants</b>	25-100 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>
<b><i>Tree Fruits</i></b>		
<b>Avocados</b>	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Accelerated natural ripening</li> </ul>
<b>Citrus</b> Grapefruits, Mineolas, Lemons, Limes, Mandarins, Oranges, Pummelos, Tangelos and Tangerines	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Accelerated natural ripening</li> </ul>
<b>Pome Fruits</b> Apple, Crabapple and Pear	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>
<b>Stone Fruits</b> Peaches, Plums, Cherries, Apricots	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>

<b>Other Crops</b>		
<b>Bananas</b>	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Accelerated natural ripening</li> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> <li>•</li> </ul>
<b>Mangos</b> <b>Pomegranates</b> <b>Pineapples</b>	50-200 dip 500-1000 spray	<ul style="list-style-type: none"> <li>• Improved fruit quality</li> <li>• Extended shelf life</li> </ul>

**Use on Cut Flowers:** Use LPE 1% SL on freshly cut flowers to extend shelf life, improve blossom life and enhance uniform bud opening. Dilute LPE 1% SL in water at a rate of 1-25 ppm and submerge stems of freshly cut flowers in solution. Renew LPE 1% SL solution if water becomes cloudy.

### **Chemigation Directions for Use**

#### **General Requirements:**

- 1) Apply this product only through a sprinkler including a center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set of hand move irrigation and systems. Do not apply this product through any other type of irrigation system.
- 2) Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- 3) If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- 5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make any necessary adjustments should the need arise.

#### **Specific Requirements for Sprinkler Chemigation:**

- 1) The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of liquid back towards the injection pump.
- 3) The pesticide injection pipeline must contain a functional, normally dosed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Application Instructions:**

- 1) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.

- 2) Determine the treatment rates as indicated in the directions for use and make proper dilutions.
- 3) Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required. The product will immediately go into suspension without any required agitation.
- 4) The product is to be applied continuously for the duration of the water application.

#### **STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal.

**Storage** - Store at room temperature in an area away from direct sunlight until used.

**Pesticide Disposal** - Wastes resulting from use of this product may be disposed of at an approved waste disposal facility.

**Container Disposal**- Non-refillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

#### **OPTIONAL LABEL CLAIMS**

- LPE 1% SL is a growth regulator that enhances fruit quality, ripening and shelf life of select fruits, flowers and vegetables.
- With SignaFresh®
- MasterFresh™